

Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1 - 5 Canceled

6. (Currently Amended) A signal detecting circuit which irradiates a pulse light from a light emitting element to a windshield of a vehicle, receives a reflected light by a light receiving element, processes the pulse signal from the light receiving element and inputs it to a processing unit in order to control a wiper of the vehicle, comprising:

a current - voltage converter circuit for converting the pulse signal from said light emitting element to a voltage signal;

an outside-light component reducing circuit provided in parallel with said current - voltage converter circuit for holding a constant outside light component included in an output signal of said current - voltage converter circuit and feeding it back to the input side of said current - voltage converter circuit; and

a band-pass filter circuit/amplifier circuit for reducing a noise of the output signal of said current - voltage converter circuit and for amplifying the output signal;

wherein said outside-light component reducing circuit includes

a switch circuit connected to the output side of said current - voltage converter circuit,

an outside-light component voltage holding circuit connected to said switch circuit for holding the voltage of said constant outside light component, and

an outside-light component voltage - current converter circuit connected to said outside-light component holding circuit for converting the held voltage to an electric current and feeding it back to the input side of said current - voltage converter circuit.

7. (Currently Amended) A signal detecting circuit according to claim 6, wherein a low-pass filter circuit is further provided inside said band-pass filter circuit/amplifier circuit for reducing a high frequency component of the a fluctuating outside-light component included in the output signal.

8. Canceled.

9. (Currently Amended) A signal detecting circuit according to claim 86 or 7, wherein said switch circuit is turned on when said light emitting element is turned off, and
said switch circuit is turned off when said light emitting element is turned on.

10. (Currently Amended) A signal detecting circuit according to any one of claims 6 to 9 claim 6 or 7, wherein said light emitting element is a light emitting diode, and said light receiving element is a photodiode.

11. - 14 Canceled

15. (Currently Amended) A signal detecting method in which a pulse light is irradiated from a light emitting element to a windshield of a vehicle, a reflected light is received by a light receiving element, the pulse signal from the light receiving element is processed and inputted to a processing unit in order to control a wiper of the vehicle, comprising the steps of:

converting the pulse signal from said light emitting element to a voltage signal; feeding back a constant outside light component included in said converted voltage signal; and

reducing a noise of said voltage signal and amplifying the voltage signal;
wherein the step for feeding back said constant outside light component includes a step for holding the voltage of said constant outside light component when said light emitting element is off; and a step for converting the held voltage to an electric current and adding the converted current to said pulse signal.

16. Canceled.

17. (Currently Amended) A signal detecting method according to claim 15, further comprising a step for reducing a high frequency component of a fluctuating outside-light component, included in said converted voltage signal.

18. - 24 Canceled

25. (Currently Amended) An outside-light component reducing circuit in a signal detecting circuit which irradiates a pulse light from a light emitting element to a windshield of a vehicle, receives a reflected light by a light receiving element, processes a pulse signal from the light receiving element and inputs it to a processing unit in order to control a wiper of the vehicle, for reducing said constant outside-light component, characterized in that the outside-light component reducing circuit is provided in parallel with a current - voltage converter circuit for converting the pulse signal from said light emitting element to a voltage signal for holding ansaidconstant outside light component included in an output signal of said current - voltage converter circuit and feeding it back to the input side of said current - voltage converter circuit,
wherein said outside-light component reducing circuit further comprises:
a switch circuit connected to the output side of said current - voltage converter circuit;
an outside-light component voltage holding circuit connected to said switch circuit for holding the voltage of the constant outside light component; and
an outside-light component voltage - current converter circuit connected to said outside-light component voltage holding circuit for converting the held voltage to an electric current and feeding it back to the input side of said current - voltage converter circuit.

26. Canceled.

27. (Currently Amended) An outside-light component reducing circuit according to claim 25or-26, wherein said light emitting element is a light emitting diode and said light receiving element is a photodiode.

28. Canceled.